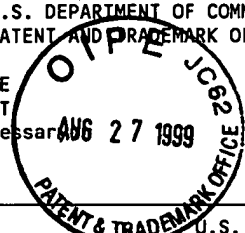


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STATEMENT BY APPLICANT
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Hartoun Hartounian et al.FILING DATE
November 13, 1998GROUP
1712

(37 CFR 1.98(b))



U.S. PATENT DOCUMENTS

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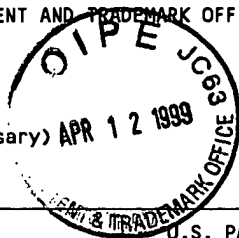
OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)

<i>lw</i>	AQ	Tanaka et al., "Communication to the Editor...Flow and Bubbling," Biotechnology and Bioengineering, Vol. 47,
		No. 3, Pp. 401-404 (1995).
	AR	
	AS	

EXAMINER <i>kw</i>	DATE CONSIDERED <i>7/2</i>
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EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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U.S. PATENT DOCUMENTS

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	AC	5	5	7	6	0	1	7	11/19/96	Kim	424	450	02/23/95
	AD	5	4	5	5	0	4	4	10/03/95	Kim et al.	424	450	05/14/93
	AE	4	6	6	8	5	8	0	05/26/87	Dahm et al.	428	402.21	06/03/85
	AF	4	8	4	4	6	2	0	07/04/89	Lissant et al.	366	136	11/24/86
	AG	5	1	4	7	1	3	4	09/15/92	Bradley et al.	366	150	07/02/91
	AH	4	7	6	1	2	5	5	08/02/88	Dahm et al.	264	4.7	04/24/87
	AI	4	4	5	4	0	8	3	06/12/84	Brown et al.	264	4.7	12/21/81
	AJ	4	0	2	6	8	1	7	05/31/77	Ciuti et al.	252	312	07/03/75
	AK	3	9	4	6	9	9	4	03/30/76	Mertz et al.	259	7	04/10/74

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	AL	0280503 B1	07/04/93	European Patent Office				
	AM	PCT/US96/11642	09/13/96	International Search Report				
	AN	PCT/US94/04490	07/21/94	International Search Report				
	AO							
	AP							

OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)

AQ	1.	V.G.J. Rodgers, R.E. Sparks ; AIChE Journal, "Reduction of Membrane Fouling in the Ultrafiltration of Binary Protein Mixtures", Vol. 37, No. 10, PP 1517-1528
AR	2.	John Wiley & Sons, Inc.; Communications to the Editor, "Crossflow Filtration of Baker's Yeast With Periodical Stopping of Permeation Flow and Bubbling", March 17, 1995, Vol. 47, PP 401-404
AS	3.	Sanjeev G. Redkar, Robert H. Davis; AIChE Journal; " Cross Flow Microfiltration with High Frequency Reverse Filtration"; March 1995, Vol. 41, No. 3, PP 501-508

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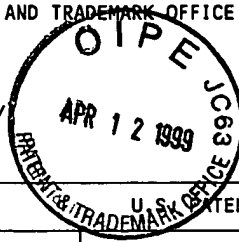
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OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)		
BQ	4.	G. Arroyo, C. Fonade; Journal of Membrane Science; "Use of Intermittent Jets to Enhance Flux in Crossflow Filtration"; June 2, 1993, Vol 80, PP 117-129
BR	5.	M.Y. Jaffrin, B.B. Gupta, P. Paullier; Journal of Membrane Science; "Energy Saving Pulsatile Mode Cross Flow Filtration"; Sept. 21, 1993, PP 281-290
BS	6.	C. Maranges, C. Casasnovas, C. Lafforgue-Delorme; Biotechnology Techniques; "Crossflow Filtration of Saccharomyces Cerevisiae Using An Unsteady Jet"; Sept. 1995, Vol. 9, No. 9, PP 649-654

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PATENT DOCUMENTS

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OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)

CQ	7.	Yuh-Fuh Maa, Chung Hsu; Journal of Controlled Release; "Liquid-liquid emulsification by rotor/stator homogenization"; 1996; Vol. 38/2,3, PP 219-228 ✓	
	8.	R.G. Holdich, I.W. Cumming, B. Ismail; Chemical Engineering Research and Design; "The Variation of Pressure Flow Filtration Rate With Wall Shear Stress and The Effect of Deposit Thickness" January 1995, Vol. 75, No. A1	
		PP. 20-26 ✓	
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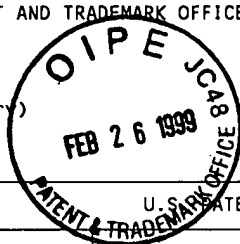
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Hartoun Hartounian et alFILING DATE
November 13, 1998GROUP
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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		PATENT NUMBER							ISSUE DATE	PATENTEE	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
JA	AA	5	7	6	6	6	2	7	06/16/98	Sankaram et al.	424	450	05/23/97
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	AC	4	1	1	3	7	6	5	09/12/78	Reichardson et al.	260	505	11/15/76
	AD	4	5	9	0	0	3	0	05/20/86	Gillner et al.	264	331.19	06/06/84
	AE	4	9	3	7	0	7	8	06/26/90	Mezei et al.	424	450	08/26/88
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OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)

JA	AQ	Matsumoto et al., An attempt at Preparing Water-in-Oil-in-Water Multiple-Phase Emulsions, Journal of Colloid and Interface Science, Vol. 57, No.2 November 1976, pp. 353-361.
	AR	Saberi, et al., Bubble size and Velocity Measurement in Gas-Liquid Systems: Application of Fiber Optic Technique to Pilot Plant Scale, The Canadian Journal of Chemical Engineering, Vol. 73, April 1995, p. 253-7.
	AS	Tsuchiya et al., Tortuosity of Bubble Rise Path in a Liquid-Solid Fluidized Bed: Effect of Particle Shape
		AIChE Journal, Vol. 41, No. 6, June 1995, p. 1368-74.

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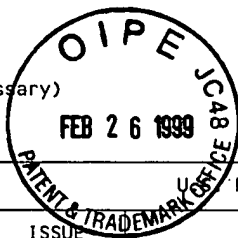
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OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)							
	BQ	Chattopadhyay et al., The Protective Effect of Specific Medium Additives with Respect to Bubble Rupture, <input checked="" type="checkbox"/>					
		Biotechnology and Bioengineering, Vol. 45, Pp. 473-480, 1995					
	BR	Cherry et al., Cell Death in the Thin Films of Bursting Bubbles, American Chemical Society and American <input checked="" type="checkbox"/>					
		Institute of Chemical Engineers, Biotechnol, Vol. 8, No. 1, 1992, p.11-18.					
	BS	Michaels et al., Sparing and Agitation-Induced Injury of Cultured Animal Cells: Do Cell-to-Bubble Interaction <input checked="" type="checkbox"/>					
		in the Bulk Liquid Injure Cells, Biotechnology and Bioengineering, Vol. 51, pp. 399-409, 1996					
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OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)

CQ	Andrews et al., Boundary Layer Solution for a Bubble Rising through a Liquid Containing Surface-Active Contaminants, Ind. Eng. Chem. Res., Vol. 34, No. 4, 1995, p.1371-82.	/
CR	Kawashima et al., Shear-Induced Phase Inversion and Size Control of Water/Oil/water/Emulsion Droplets with Porous Memberane, Journal of Colloid and Interface Science, Vol. 145, No. 2, 1991, p.512-23.	/
CS	Watts et al., Microencapsulation Using Emulsification/Solvent Evaporation: An Overview of Techniques and Applications, Critical Reviews in Therapeutic Drug Carrier Systems, Vol. 7, Issue 3, 1990, p. 235-59.	/

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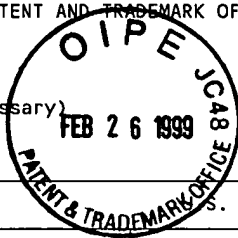
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OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)

L	DQ	L. Mancini, Food Engineering, March 1996, p. 79-83, October 1994	✓
		Mutsakis, et al. Advances in Static Mixing Technology Chem. Engineering Process, July 1986, pp. 42-48	✓
J	DR	E. Paul, Chemistry and Industry n10, p. 320(6), May 21, 1990	✓
		Steiff, et al., Don't Overlook Static-Mixer Reactors, Chemical Engineering, June 1994, Vol.1, n6, pp76-82	✓
U	DS	Kim T. et al, Extended-release formulaions of morphine for subcutaneous administrtion. Cancer Chemother	✓
		Pharmacol. 1993, Vol. 33, pages 187-190	✓

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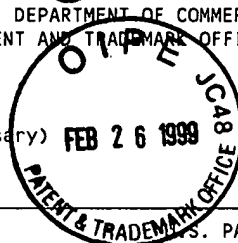
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<i>W</i>	EQ		Johnson, et al., Oil and Gas Journal, v. 92, n43, pp. 80-86, October 1994 ✓					
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